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BULLETIN No. 1.

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BRASSICA CROSSES.

By

ARTHUR W. SUTTON, F.L.S., V.M.H.

A Lecture Delivered
Before the Linnean Society,
January 16th, 1908.

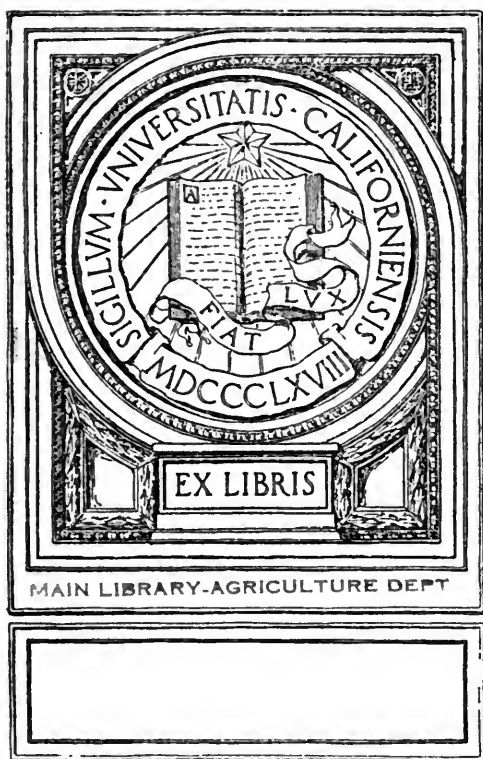
PRICE 2s. 6d. Net.

Published by

SUTTON & SONS, READING,

Seedsman By Appointment to His Majesty King George V.

YD 04789



Smith & Co.

Portland, Me.

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The
Progress in Vegetable Cultivation
during Queen Victoria's Reign.

By ARTHUR W. SUTTON, F.L.S.

PROBABLY no more fitting subject could be chosen for one of the papers to be read at a Conference of the Royal Horticultural Society in the sixtieth year of Her Majesty's Reign. Appropriate as the subject undoubtedly is, I cannot but think that our worthy Secretary might have made a far happier choice when selecting a speaker. It is manifestly impossible for anyone of my age to state from personal knowledge what the condition of the Vegetable Garden was in 1837, and it is therefore impossible for me to say from my own observation what progress has been made.

Mr. WILKS invited my father (now in his 83rd year) to contribute a paper on this subject, but, like many others whose memory carries them back over the past sixty years, his physical powers are not equal to his mental activity, and he was compelled to decline. Although yielding to Mr. Wilks's somewhat pressing request that I would myself prepare a paper, I feel I owe this assembly an apology for attempting what others could do so much better. It was only possible for me to glean the necessary information from those who were actively engaged in horticultural pursuits at the time when our Gracious Sovereign came to the throne, and though I have met with the greatest willingness to impart knowledge, it is a somewhat remarkable fact that my correspondents had a far clearer recollection of fruits, methods of culture, and even the scale of garden wages, than they had of the Vegetables grown in 1837. I can only conclude that there was nothing particularly striking about the Vegetables in use at that time, at least as regards their intrinsic merit.

It will be noticed that the title refers to Progress in Vegetable Cultivation, but I do not suppose I was intended to speak so much of the cultivation as of the improvement of the Vegetables cultivated. Had it been otherwise, I cannot doubt that one of the many able gardeners connected with the Society would have been invited to read a paper rather than myself.

In sketching the outline of my paper I therefore felt that I could not do better than take the leading Vegetables, enumerating the kinds in cultivation in 1837, and then briefly mention the improvements that have since followed. It is obvious that unless there had been a very marked advance in the Vegetables grown, the progress in cultivation would have been comparatively insignificant. In saying this, I do not for a moment suggest that the gardeners of to-day are not far in advance of those of 1837, but that whatever method of culture might be adopted

now, no very great advance would be possible in the absence of improved Vegetables to work upon. Without further introduction I will at once refer to the Prince of Vegetables

THE GARDEN PEA.

The progress made during the last sixty years in the improvement of the Garden Pea has been fully commensurate with the prominent position this Vegetable occupies. I think also I am correct in saying that this proud position has been attained solely through the progress made in its improvement since 1837—an astonishing evolution, as all will admit when the Peas of 1897 are compared with those of 1837. In the thirties and for many subsequent years the gentleman's garden—as well as the market garden—was dependent upon such varieties as Woodford's, Bedman's Imperial, Scimitar, Early Charlton, Warner's Emperor, Early May, McCormick's Prince Albert, and Early Warwick, the other principal sorts cultivated being Blue Prussian, Bishop's Early Dwarf, and Auvergne. Such of these Peas as are now grown we, with better varieties at our disposal, look upon as chiefly suitable for boiling in a dry state. Knight's Tall Green Marrow, a wrinkled Pea, was certainly available at that time, but was not so generally grown as the round-seeded sorts, which an old gardener informs me were so hard and dry when cooked that they were known as Buckshot Peas.

During the next decade a few varieties, such as Sangster's No. 1, Champion of England, British Queen, and Hair's Dwarf Mammoth, were added to the list, the first three of which are still largely grown by those who have had no opportunity of testing better sorts; but no considerable interest was awakened until the advent of that popular favourite, "Ne Plus Ultra," which was introduced under three or four names in as many successive seasons. Even at the present day, when testing year by year all the so-called novelties as they appear, it is frequently found that still another name has been added to the already long list under which "Ne Plus Ultra" is offered. Of its class as a tall late marrow Pea, it is doubtful if any later introduction has ever shown, comparatively, a greater advance on previous kinds.

In passing it may be of interest to state that three of the principal Peas distributed by my house in 1841 were Blue Prussian, Woodford's, and Scimitar, from which we may form a fairly correct idea of the class of Peas then grown by gardeners.

Mr. Nutting informs me that in the same year, 1841, his father catalogued the following varieties of Peas: Scimitar, Matchless, Warwick, Groom's Dwarf, Prussian, Woodford's Dwarf Marrow, Charlton, Knight's Dwarf Blue, Racehorse and Knight's Tall.

It is also interesting to record the fact that in the first Catalogue of Seeds issued by Messrs. Hurst & McMullen in 1843, only five varieties of Peas were offered, viz.: Auvergne, Early Kent, Waterloo, Victoria, and Knight's Marrow. The enterprise for which this house has always been noted soon manifested itself, for we find only three years later that the number of Peas had increased to fifteen.

Up to 1857 there had been introduced Daniel O'Rourke and our Early Champion as representing improved types of early Peas; and Glory, Climax, Dickson's Favourite, Prizetaker, and Epps's Lord Raglan.

In 1859 that popular Pea, Veitch's Perfection, was introduced, and in the same year also the first selections of Dr. McLean's Seedlings were put on the market by Mr. CHARLES TURNER, including Princess Royal, followed a few years later by Little Gem; and these continued to be favourites for a quarter of a century. This was the commencement of a period of activity which has extended with increased vigour till the present day—the skilful hand of the hybridiser in conjunction with the keen eye of the expert producing such Peas as Her Majesty's gardener in 1837 never dreamt of.

Here I may remark that the work of selecting is in no degree less important than that of hybridising. This will be better understood when I explain that a seedling Pea is now generally the result of so much inter-breeding that very many distinct types will often be represented in the ultimate cross. This cross will give a pod containing from six to ten or more seeds. At this point the work of the hybridiser ceases and the responsibility of the selector commences.

When sown the following year these seeds will in all probability produce as many distinct seedling Peas, some partaking of the character of the parents, and some not; but the difficulty increases when we find that seed saved from each of these plants very frequently varies in each case to such an extent that the greatest patience is required in order to secure any fixed type at all. Let me make my meaning still clearer, if possible. The first year we start with, say, six seeds in the one pod.

The second year we have six seedling plants.

The third year we have six rows, short or long, the produce of the six plants of the preceding year; but we may also find in each of these six rows Peas of all types, viz.: tall; dwarf, and of medium height; early, later, large and small podded, pale and dark in colour, curved and straight in the pod, with square or pointed terminals (this difference alone being sufficient to distinguish two popular garden varieties). Last, but not least, some may be round-seeded and others wrinkled-seeded. It is clear that the selector must re-commence with the most promising plant in each row, and endeavour to build up a seedling Pea which will reproduce itself from seed without variation, a task often extending over many years. In scarcely any instance known to me has a seedling Pea been put on the market without such selection as I have alluded to.

Between 1860 and 1880 many varieties raised by Dr. McLean, of Colchester, and Mr. Thomas Laxton, of Bedford, were introduced; amongst them being Prince of Wales, Dr. McLean, Omega, William the First, and William Hurst, all of which are more or less popular at the present day. During the same period the first results attained by the veteran William Culverwell—whose excellent work deserves grateful recognition from all who value marrowfat Peas—came to light in Telegraph, Telephone, Stratagem, and Pride of the Market, which varieties were introduced by Messrs. Carter. By this time Henry Eckford was endeavouring, and with considerable success, to infuse the blood of Ne Plus Ultra into a dwarfer race of Peas. From various sources appeared during the next few years Autocrat, Duke of Albany (which is certainly one of the most popular Peas of the present day), Sharpe's Queen, Webb's Wordsley Wonder, and others. In 1881 my house introduced American Wonder, which still is more extensively grown than any other early dwarf wrinkled Pea.

On this occasion I should have preferred to avoid any allusion to the work of my firm in connection with the Pea, but I think it will be conceded that no sketch would be complete without referring to the first early wrinkled marrowfat and other sorts, which have been introduced during the past few years, and in the selection of which I have personally been deeply interested ; I allude especially to May Queen, A 1, Empress of India, Seedling, Excelsior, and Forcing, which have attracted so much attention at recent Temple Shows.

Our aim has been to replace the small, hard, round-seeded sorts, on which the public formerly depended for their first supply, with Peas of dwarf growth, but equally early, and producing pods as large as Telephone, Duke of Albany, and Peas of that class, containing large wrinkled peas of marrowfat flavour ; and we have succeeded beyond our most sanguine expectations. In Peas of a later class we have introduced other popular kinds, such as Royal Jubilee, Perfection, Windsor Castle, Exhibition, Magnum Bonum, Late Queen, and others. The eagerness with which all these new Peas have been sought after as soon as they had been tried attests their value, and it is personally gratifying to me to know that Her Majesty—in whose honour we are met to-day—allowed our Collection of Peas staged at the Temple Show in 1896 to be placed in the Entrance Hall at Windsor Castle for personal examination, and that some of the Peas appeared the same evening upon the Royal table. Mr. OWEN THOMAS will perhaps permit me to mention that this year the Queen was so pleased with the Peas he had grown at Windsor that a command was telegraphed from Balmoral to forward a supply by post daily, also that in June last the Empress Frederick wished seed sent at once to the gardens at Friedrichshof, in order to have marrowfat Peas in the autumn.

During recent years the list of good Peas has been further increased by such excellent sorts as Daisy, Veitch's Maincrop, Alderman, Laxton's Gradus, and many others.

Here it may be well to remark that the improvement of Peas, as well as of other Vegetables, has doubtless received considerable impetus from the keen competition upon the exhibition table—a hobby which our older gardening friends seldom, if ever, indulged. This competition has likewise had a very marked effect upon the cultivation of Peas and other Vegetables, so that, with the fine types now procurable and the improved systems adopted by growers, results are obtained which are really marvellous.

Before leaving this section reference must be made to the careful work done in the Chiswick Gardens in making trials of Peas for many years past. The value of these trials, great as it is, would be considerably enhanced had circumstances rendered it possible to grow a larger number of older sorts alongside the new varieties for the sake of comparison. I may mention that in order to make the Reading Pea Trials comprehensive enough to determine the value of new seedlings, and to fully test the older varieties offered, &c., it is necessary to sow from 600 to 700 rows annually.

BROAD BEANS.

In the early days of the Queen's reign lovers of this Vegetable were relatively better off than those who preferred Peas. There already existed such kinds as

Mazagan, Dwarf Fan, Early Longpod, and the White and Green Windsors. These have, of course, been greatly improved upon, but they all remain in use ; though it is somewhat surprising that the Mazagan should be grown at the present time, as in every point it is surpassed by other superior types.

The fact, however, that Beans in use sixty years ago are still grown seems to show that the advance has been less rapid than in the case of many other Vegetables. The improvement that has been made is almost entirely the result of selection, although the crossing of Seville Longpod and White Windsor has produced a variety sent out by my house as Giant Windsor, which, as its name implies, is a much larger type of the Windsor section than previously existed.

During the fifties the Seville and the Aquadulce Longpods (very similar sorts) were introduced from the Continent, and on account of their earliness and length of pod have been and still are largely grown, although the constitution of both plants is far less vigorous than that of our English sorts.

Beck's Green Gem, a sport from the Dwarf White Fan, was introduced in 1858, and some years afterwards the market gardeners in the neighbourhood of Harlington, Middlesex, set to work to improve the Windsor by selection, and as a result of their efforts we have the Harlington White and Green Windsors.

Painstaking selection has done much in the improvement of the Longpod section, the several strains known as Exhibition being fine and profitable types, the best selections of which, both white and green seeded, sometimes contain as many as eight or nine beans in a pod, contrasting most favourably with the two or three beans found in the pods of the older kinds. The Broad Bean is not only greatly prized in private gardens, but is also an important article of food among operatives ; indeed the efforts made to increase its productiveness have been duly appreciated by all classes of society.

DWARF FRENCH or KIDNEY BEANS.

There were several sorts in use when the Queen ascended the throne, but the principal difference lay in the colour of the seed, a feature of little importance, except to those who keep a collection of these diversely coloured and pretty seeds. French Beans were, in fact, frequently named after the colour of, or the markings on the seeds ; to wit, the Zebra, Light and Dark Dun, Red and Purple Speckled, Negro, &c. Fulmer's Forcing, which was in use in 1837, was the chief exception. The scope for improvement is limited to size of pod, earliness, and productiveness, and in the former respect Canadian Wonder, immediately it was introduced, became very popular, while Ne Plus Ultra, an introduction of more recent date, fairly lays claim to being a marked advance over most sorts, both for earliness and productiveness. Besides these, such excellent varieties as Triumph, White-seeded, Forcing, Green Gem, Monster Negro, have appeared, and undoubtedly it may be said that they have come to stay. It was thought that the crossing of this section with the Scarlet Runner might produce useful results ; but although many hybrids combining the broad, massive pods of the Scarlet Runner with the habit of the Dwarf Bean are in the hands of one or two experts, little, if any, advance upon such favourites as Canadian Wonder and Ne Plus Ultra has been made.

CLIMBING FRENCH BEANS.

One of the most notable achievements in Vegetables during Her Majesty's reign has been the creation of an entirely new race of French or Kidney Beans, with a climbing habit of growth. There are several distinct types before the public, differing in the size and colour of the seed, shape and size of pod, and in earliness also. Amongst these are our Tender and True and Veitch's Climbing, both attaining a height of 4 to 7 feet, according to cultivation. A more recent introduction is our Excelsior—a Bean combining the delicacy and tenderness of the Canadian Wonder with the vigorous growth of the Scarlet Runner.

RUNNER BEANS

were represented sixty years ago by the old Scarlet, the Painted Lady, and the Large White, and although one or two Runner Beans of recent introduction are the result of artificial crossing, the majority of the improved types have been obtained by selection. Even in some of these cases it is quite reasonable to suggest that they are natural crosses resulting from inoculation. Scarlet Runners producing pods $13\frac{1}{2}$ inches in length would have caused almost as much interest amongst the gardening fraternity of 1837 as did the advent of the first motor-car in the streets of London. That greater length will yet be attained I have no doubt, and with it an improvement in quality on some of the existing large-podded kinds.

The homely Scarlet Runner, which Tradescant cultivated in his garden at Lambeth in the seventeenth century for the sake of its flowers, can now, in its improved form, boast of an almost unlimited number of attractive names, each chosen to indicate a type of greater size or length than any previously quoted.

ASPARAGUS, &c.

Until quite recently English gardeners and their employers appeared to be satisfied with the kinds grown when the Queen came to the throne, such as Giant and Battersea; but the facilities for reaching the Continent have resulted in the desire to cultivate the sorts which produce the massive sticks so well grown in France. The most popular French strain is the best selection of Argenteuil, and when the English cook has learned to imitate more closely the methods of the French *chef* we shall doubtless find as delicate and delicious Asparagus in London restaurants as in those of Paris.

In like manner has the increased taste for Globe Artichokes been formed—a delicacy which was seldom grown fifty or sixty years ago.

The increased use also of Sugar Peas, Waxpod or Butter Beans, Celeriac, Chicory, Endive, Cardoons, Egg Plants, Silver or Sea Kale Beet, and other kindred subjects, may be traced to the same cause.

We do not appreciate all the ways of railway companies, but they have undoubtedly been the means of introducing us to some of the more delicate and delicious Vegetables of the Continent.

BEET.

Salads are much more popular now than they were sixty years ago, and as Beet, perhaps, comes next in importance to the Cucumber and Lettuce, the natural result has been a marked improvement in the varieties grown. In the early days of the Queen's reign, Dwarf Red, Large Red, and Turnip-rooted were the sorts in use. Seeing how difficult it is to obtain seed which will produce absolutely uniform results in colour of leaf, &c., it was a happy idea on the part of the seed-seller of those days to protect himself by labelling the packets with such comprehensive names. It is quite certain that even now the description Large Red would be very applicable to strains frequently seen growing. In 1841 Whyte's Black was introduced, a variety almost black in the flesh, but inclined to be coarse in texture as well as strong in growth, and with considerable variation in the colour of leaf. Notwithstanding these faults, it is still to be found in nearly all seed lists, and presumably, therefore, has its admirers. Of late years a large number of improved types of this class have been seen, and those who fancy Beets with flesh almost black have no lack of choice.

Later introductions which remain popular are Nutting's Dwarf, Pine Apple, and Dell's Black-leaved. From the first and last various selections have been made, resulting in uniform and excellent types.

Within recent years Cheltenham Green-top has also come to the front, although I understand it has long been grown in the neighbourhood from which it takes its name. It is an excellent Beet, though disliked by some on account of the colour of the leaves. The Turnip-rooted, so useful for shallow soils, has undergone great improvement, the flat type, called Egyptian, being almost superseded in English gardens by the introduction in 1891 of Sutton's Globe, which is as perfect in form and clean in growth as a Snowball Turnip. Many types of Globe Beet have also been introduced from America, but generally speaking the colour of the flesh is not up to the English standard.

A White Beet, called Bassano, was grown in the thirties, but it never became very popular. In recent years efforts have been made to popularise a yellow-fleshed kind, but although I can vouch for the excellent flavour of this Beet, the general public do not appreciate it.

THE BRASSICAS.—CABBAGE.

First and foremost in point of general utility comes the Cabbage. Although our forefathers had not so long a list of names to select from as gardeners now have, there were several good Cabbages in 1837. Chief among these were Early Battersea, Early York, Large York, Emperor, Sugarloaf, &c., names which still retain a place in all seed lists, and these varieties are certainly valuable for spring sowing. It is reasonable to suppose that the crops of those days suffered from "bolters," and with none but these and similar sorts to grow the probability is that an even bed of Spring Cabbage would be the exception, as they are all peculiarly liable to bolt. Of late years much has been done to avoid this tendency, and we now have such Cabbages as Ellam's Early, Early Offenham, Imperial, Flower of Spring and Early

April, which, when obtained true to name, may be relied upon in any season to form solid hearts without bolting.

The improvement in the Cabbage has been entirely due to selection. The advent of the Nonpareil was a distinct gain to horticulture. Amongst others, SHAW of Newbury did much to make this Cabbage popular, and as it is one of the best for spring sowing, it will be long before it ceases to be grown. Enfield Market is popular where a large-growing kind is required. Almost every market-gardening district has its own particular selection, as seen in The Rainham, Higham, Evesham, East Ham, and Fulham varieties.

Rapid strides have been made in the improvement of early Cabbages for summer use, and although many of the earliest are of Continental origin, we on this side can claim no inconsiderable amount of credit for careful selection. Earliest of All, Express, and other kindred types are Cabbages which we could not now well do without, but on account of their tendency to bolt in spring they must give place to the sorts which are specially adapted for August sowing.

The Hardy Green Colewort was introduced in 1852, and a selection from it, Rosette Colewort, appeared a few years later. These give very important crops for consumption towards the end of the year, and are delicious in flavour.

Red Cabbages have been so far improved that, instead of relying on an August sowing for heads to use in the following summer and autumn, they can now be obtained in the same year by sowing in spring.

Savoy Cabbages are in demand for only a limited period, and have not had much attention devoted to them, although it is now possible by the use of recently introduced early and later kinds to extend the supply from August to April, if required.

BRUSSELS SPROUTS

amongst Brassicas stand next in importance to the Cabbage, Broccoli and Cauliflower. This plant was well known in 1837, but since that time wonders have been accomplished in its improvement by means of selection, and we now have dwarf, medium, and tall varieties of great excellence. Serymger's Giant, Dalkeith, and Reading Exhibition were among the earlier improvements, while the Dalmeny and Albert Sprouts, first offered about 1858-59, had but a short-lived reputation.

A dwarf type, originated on the Continent, and covered with close, firm buttons, has of late years given excellent results, the best strain being the Dwarf Gem.

As is well known, the sporting tendency of the Brassicas is responsible for some very peculiar forms, and it is, I think, not at all unlikely that a Brussels Sprout with red buttons may eventually have a place amongst our favourite Vegetables.

BROCCOLI

were represented in the earlier days by the Capes, Grange's Autumn, Portsmouth, Sulphur, Dwarf Russian, Purple Sprouting, and Knight's Protecting. In 1843 the popular Snow's Winter White was introduced, and although various and inferior strains have since been offered under this name, it is safe to say that in many cases the seed now sold is altogether superior to the original type. The following year Walcheren, which should perhaps be classed amongst the Cauli-

flowers, was brought to notice, and has done good service. After this came Adams's Early, Wilcove Late White, Dilcock's Bride and White Sprouting. In later years, Broccoli with heads of closer and whiter texture have appeared, including Leamington (still one of the best), Perfection, and Late Queen. Great improvements have been made in Purple Sprouting Broccoli by selection, and it is now possible to grow three distinct types, the earliest of which is available for use at Christmas, the ordinary type following, and lastly a late selection of more compact growth and better-coloured sprouts. The hardiness of these strains is an important feature, and their popularity must continue.

In the late Broccoli it has been difficult to retain lateness without in some degree sacrificing colour and quality, but I am pleased to note that a late Broccoli which continues good in quality longer than any variety with which I am acquainted, and with heads in every way equal to an autumn Cauliflower, is already in existence, and will certainly become deservedly popular. By these late as well as the extra early selections there is now no difficulty in having a succession of good Broccoli and Cauliflower throughout the year.

CAULIFLOWERS

are scarcely to be surpassed for delicacy of flavour when properly cooked. Three types were grown in 1837, the Early, Late, and Asiatic. These were followed by the Stadtholder, Walcheren, Snowball, Erfurt, and Veitch's Autumn Giant. As Cauliflower seed can seldom be successfully grown in England, we are indebted chiefly to Dutch, German, and Italian specialists for most of the improvements made, and with the finest types of the Dwarf Erfurt section, such as Snowball and First Crop, at one end, and the early and late selections of the Italian Giant varieties at the other, we can extend the supply over a very much longer period than was possible sixty years ago. A head of Cauliflower 36 to 38 inches in circumference, of perfect quality, was a thing unheard of in 1837, but it is by no means uncommon to-day.

KALES.

The great diversity in colour and form of this section of the Brassicas at the present day would surprise any gardener who knew only the few sorts existing at the commencement of the Victorian era. The hardiness of this useful vegetable has always been its most important feature, and it is to be hoped that the newer selections will retain this essential characteristic.

During the fifties Mr. Turner introduced the hardy and most useful Cottager's Kale, and it appears to increase in favour. Mention must also be made of the Variegated Kale, a highly ornamental plant as well as useful for cooking purposes. In midwinter the charming colours of the leaves render them invaluable for decorative purposes.

THE CELERIES OF 1837

were the Italian, Red and White Solid, and Turnip-rooted, and although there are now many superior sorts, Celeries vary so little in character that there is less scope for great improvement than in many other garden Vegetables. Much, however,

has been done in improving the solidity and flavour, and amongst the Reds may be noted Clayworth Prize, A 1, Standard Bearer, Sulham Prize, and Leicester Red, with Solid White and Wright's Grove White as the best of the White section. Probably the most distinct variety of English origin is White Gem, a small early sort of great value.

Attempts have been made to popularise the Continental self-blanching sorts, but although these may be useful for soups, they are practically of no value where tender, fine-flavoured Celery is prized, for except in appearance they differ but little from unblanched English Celeries.

CARROT.

In Carrots the progress made has been very marked indeed during the period under review. Although there were several varieties grown in the early years of the Queen's reign, they were either very long, such as Altrincham and Surrey, or of the Horn section. Improvements on some of these quickly appeared, James's Scarlet Intermediate at once became popular, and for market purposes will doubtless long continue to be grown. Our French neighbours are adepts at the improvement of the Carrot, and the English trade is indebted to them in this respect to a larger extent, perhaps, than in any other Vegetable. The French Forcing Horn and Nantes have met with warm approval, the finest types of the latter being particularly free from the objectionable yellow core existing in most sorts. It is only necessary to refer to the magnificent specimens of New Intermediate and Early Gem, and similar varieties, which are so frequently seen on the exhibition table for evidence of the great improvement which has been made in this popular Vegetable.

THE CUCUMBER

was represented by numerous sorts at the time of the accession of the Queen, including Early Frame, and White and Black Spine, besides the so-called Long Prickly and Short Prickly Ridge Cucumbers. Snow, Cuthill, Mills, and Constantine were amongst those who endeavoured to improve this popular esculent, and by 1842 many varieties were available.

Kelway's Victory and Phenomenon, Sion House, and Victory of Bath appeared during the fifties, and a few years later Berkshire Champion and Manchester Prize. Then it was that Thomas Lockie took the Cucumber in hand, and Blue Gown (and its sport, Tender and True), Royal Windsor, and the deservedly popular Lockie's Perfection were the leading varieties raised by him. Meanwhile, other sorts, including Telegraph and Cardiff Castle, obtained a leading place, and it will be a long time before Telegraph is superseded for general cultivation.

I have not inquired from the Messrs. Rochford how many years the Rochford Cucumber has been in their family, but it is probably more sought after by growers for market than any other variety. In recent years the palm for raising improved varieties must certainly be given to Mr. Mortimer, whose wonderful exhibits at the Westminster Drill Hall and elsewhere have been greatly admired. Sutton's A 1, Peerless, and Matchless are results of his painstaking work.

THE LEEK

in 1837 was represented in this country by the Common and Flag types, although it is on record that in the previous year four Scotch Leeks were produced in Edinburgh having a circumference of 9 inches or more. A Scotch gardener informs me that although he came to England in 1854, it was several years before he saw Leeks grown here. The Musselburgh was one of the first improved forms; this was followed by Ayton Castle and Henry's Prize. The greatest triumph, however, is found in the Lyon, and the better selections of this good variety, such as Prizetaker, appear to present as perfect a form of Leek as it is possible to obtain or desire.

In this connection may be mentioned the excellent work done by the Messrs. Dobbie, who have introduced one or two very fine selections of Leek, as well as of several other Vegetables.

LETTUCE.

The number of varieties, both Cos and Cabbage, has wonderfully increased during the past twenty years, and they embrace many types and shades of colour.

In 1837 several of the varieties of the present day were in use, including amongst the Cabbage varieties, Brown Dutch, Brown and White Silesian, Drumhead, Grand Admiral, Hammersmith, and one or two others; and in the Cos, White-seeded and Black-seeded Bath, Florence, Green, White, and Spotted.

By 1842 Paris White and Green were announced, and the various selections of this type are amongst the best Cos Lettuces in use at the present time. More recently a very large kind of great excellence, named by my house Mammoth Cos, has appeared, and is very popular. White Heart, intermediate in colour between Paris White and Green, deserves a place as a popular introduction of recent years.

With regard to Cabbage Lettuce, the number of varieties now available is extraordinary. All the Year Round was amongst the first improvements, and so good is it that it has been honoured with several distinctive names. Wheeler's Tom Thumb, Veitch's Perfect Gem, Standwell Green, and others, are excellent kinds largely grown, while more recently Commodore Nutt, Favourite, and Daniel's Continuity are improved types of great merit, the two latter standing longer than other sorts without running to seed.

Recently my house has introduced the Intermediate, a variety resulting from a cross between the Cabbage and Cos Lettuce which is highly prized by many.

THE MELON

has advanced during the past sixty years by "leaps and bounds." Every year witnesses the advent of new varieties, and the Fruit Committee of the Royal Horticultural Society can testify to the constant succession of aspirants for honours.

In 1837 gardeners depended upon the Cantaloupe, Scarlet-fleshed, Green-fleshed, Lord Sondes, and Queen Anne's Pocket. In 1842, Windsor Prize Green and one or two scarlet-fleshed kinds were distributed. Ten years later Beechwood, Bromham Hall, Victory of Bath, and other standard varieties were grown, followed at short

intervals by Scarlet Gem, Blenheim Orange, Hybrid Cashmere, Imperial Green, and Hero of Lockinge, the latter still retaining the first place as the best Melon for frames. So easy is the culture that Hero of Lockinge has acquired the reputation of being essentially the Amateur's Melon.

In connection with improvement in Melons, much good work has been done by Mr. OWEN THOMAS, Mr. WYTHES, Mr. CHAS. ROSS, besides many others. In 1894 we had the pleasure of introducing a handsome white-fleshed variety, raised by Mr. Thomas, named Royal Favourite, and other noteworthy Melons have also emanated from the Frogmore Gardens.

ONIONS

were represented sixty years ago by Blood Red, Deptford, Silver-skinned Globe, James's Keeping, Lisbon, White and Brown Spanish, Portugal, and some of the Tripoli varieties. While most of the types have undergone more or less improvement, special attention has been given to the Spanish class. The Reading was a valuable selection, and it was followed by Improved Banbury, named after a town which has long been popular for its Onions. The late Mr. DEVERILL of that place introduced many fine types, such as Rousham Park, The Wroxton, Anglo-Spanish, and others. Banbury Cross, a comparatively recent introduction of fine quality, also hailed from the same town.

The justly celebrated Ailsa Craig has caused quite a revolution in this vegetable. One celebrated grower in 1896 exhibited twelve specimens weighing no less than $37\frac{1}{2}$ lbs.—an enormous weight for this country, which would have startled the growers of the olden days, who had to be content with specimens weighing only a few ounces each.

Until quite recently it had not been possible to obtain seed of the fine Spanish Onion of the grocers' shops, and although specimens grown in this country are not often so large as imported bulbs, some very fine Onions can be grown by sowing the seed in heat in January and transplanting in April.

THE PARSNIP

has certainly been much improved since the Guernsey and Hollow Crown were the only available sorts, although no very great increase in the number of varieties can be reported.

As late as 1852 the only Parsnip quoted in a leading seed list was Hollow Crown. The Student, obtained by the late Professor BUCKMAN by continual selection from the wild parsnip, and distributed by my house first in 1860, is still regarded as a popular variety, and has been singularly successful at shows. Quality in a Parsnip is almost entirely a matter of selection, and in that way the fine types now in cultivation have been obtained. Carter's Maltese marked a distinct advance, and is still widely grown. Quite recently at the Reading Show, where the general opinion was that so extensive and fine a collection of Vegetables was never before staged in competition, some of the collections contained remarkable specimens of a new variety called Tender and True. This is certainly distinct from other kinds, and possesses quality which has not hitherto been reached in this Vegetable.

SPINACH.

No great advance was made in this Vegetable until a few years ago, when the Victoria and other similar strains were introduced. It is true that many varieties bearing Continental names have been grown, some standing rather longer than others before running to seed ; but the difference was only slight. With the advent of the Victoria, however, the duration of the crop was greatly prolonged. Still more recently this variety has been surpassed, and we now have, both in the round and prickly seeded sections, strains of Spinach which remain good for weeks after others have gone to seed.

Time will not permit of my referring to Parsley, Rhubarb, Vegetable Marrow and some other Vegetables, and I must pass on to

THE TOMATO

which has increased in popularity to a greater extent and more rapidly than any other Vegetable referred to in this paper.

A proof that it was not much cultivated in the early years of Her Majesty's reign is shown by the fact that in a wholesale seed list published in 1852 the only Tomato mentioned is the common Red. It is within the last quarter of a century that such an enormous impetus has been given to the growth of Tomatoes, in consequence of the more cultivated taste of the masses of the people, and now the fruit is grown in almost every garden, from the cottager's upwards. The Queen's gardener, Mr. Owen Thomas, has identified himself with its improvement, and Frogmore Selected is one of the best sorts grown at the present day.

Mention must also be made of the very excellent golden yellow or orange Tomato raised by Mr. Thomas, which forms a striking feature in the Royal Trophy at this exhibition.

The introduction of the Perfection type was the prelude to many others, and now the number is legion. New selections are plentiful enough, as is proved by our own trials of over 200 groups this year.

To mention in detail anything like the whole of the varieties which deserve notice would take up too much time, but for earliest outdoor use Conqueror, Earliest of All, Conference, and Early Ruby are popular kinds. Fine shapely fruits and plenty of them are produced by Ifield Gem, Eclipse, Best of All, Duke of York, and Ham Green Favourite ; and in yellow varieties, Golden Nugget as a small-fruited kind, and Golden Queen may be relied on to ripen early and produce good crops.

Strange developments, in which the fruit partakes of the character of the Peach, are observed in certain kinds, and the crossing of the Peach Tomato with Perfection has resulted in some charming types.

The question as to which is the best Tomato admits of many different answers. With white, yellow, orange, pink, ruby, and scarlet kinds, not to mention the varying sizes and shapes, there is a wide choice for the most fastidious, both as regards external appearance and flavour.

GARDEN TURNIP.

A brief reference must be made to the Garden Turnip. In the early days of Her Majesty's reign as many yellow as white varieties were offered, although the demand for the former has certainly not increased in proportion to that for the white-fleshed kinds.

Amongst the many improvements may be noticed Veitch's Red Globe, Snowball, Dobbie's Model and Golden Ball, while the Red and White Milans arrive at maturity quicker than any others. These should not be confused with their prototypes, the Red and White Strap-leaved, which have almost had their day.

Of the sorts imported from the Continent, apart from the Milans, much selection and improvement have been necessary to make them worthy of a place in English gardens.

POTATOES.

It will obviously be impossible for me, at the close of this lengthy paper, to attempt to describe at all adequately the improvements effected in the Potato during her Majesty's reign, and as I have already, in my paper on "Potatoes," published in Vol. xix., Part 3, of the Journal of the Royal Horticultural Society, dealt somewhat fully with this subject, I will now content myself with the fewest possible remarks. As long ago as 1836 Messrs. PETER LAWSON & SONS published a descriptive list of 146 varieties, and amongst some forty-five of the principal of these I find only one which is still widely grown, viz., the Early Ashleaf. There are other familiar names, such as Early Shaw and Don, but the remainder must have passed out of cultivation at least twenty-five years ago.

In 1852 the old Walnut-leaf Kidney, Early Oxford, Fortyfold, and York Regent were grown—all sorts of real merit in their day, but now seldom met with. That excellent Potato, Paterson's Victoria, was widely cultivated up till 1880, but it would be difficult now to find an acre of this variety true to name. The fact that almost all these have disappeared from sight does not of itself necessarily prove that they were worthless, or even inferior to others grown at the present time; for it is generally admitted that the majority of Potatoes will not indefinitely maintain their full vigour of growth and constitution, the limit varying with each sort. This is not to be wondered at when we remember that each year's growth is but the prolongation of the life of the plant, which apparently had completed its work when the haulm died in the preceding autumn.

Still, I have no doubt whatever that even if we could reproduce such favourite varieties as Regent, Paterson's Victoria, &c., in all their former excellence, and plant them by the side of the best Potatoes of to-day, we should find that very great progress had been made, not merely in productiveness and power of withstanding disease, but also in flavour—a point in which the older sorts are often supposed to have excelled. We now have in Ringleader, A 1, Early Puritan, &c., first-early sorts which are ready for use long before the so-called early Potatoes of twenty-five years ago were ready; and also several second-earlies, such as Beauty of Hebron, Supreme, Early Regent, and Windsor Castle, which certainly were not equalled by any of the older varieties in their own section. Whether

these will retain their good qualities unimpaired twenty-five or fifty years hence no one can say ; though in all probability, as they themselves are instances of the survival of the fittest, in so far that they were chosen from thousands of less promising seedlings, several of them will doubtless greatly exceed the limit of age reached by older sorts.

In the Maincrop and Late sections, nothing has yet approached the Magnum Bonum in popularity, and it is quite as good now as when introduced by my house twenty-one years ago. There are many other varieties of a similar character, but on the closest scrutiny I have failed to detect any point in which they differ from the Magnum Bonum, and I have generally found, when any difference has been suggested, that the sorts in question were not grown alongside under the same conditions, or else that the seed had been obtained from different sources, a change of seed often producing a marked divergence in two rows of the same variety.

I must not leave the subject of Potatoes without mentioning such names as James Paterson, Robert Fenn, James Clark, Archibald Findlay, A. Dean, and Chas. Ross, all of whom have devoted many years, perhaps the best years of a lifetime, to the improvement of the noble tuber, and to these men the whole horticultural fraternity and the community at large are greatly indebted.

CONCLUSION.

We have now passed in review all the leading Vegetables, and imperfect as this paper has been, I think it will be admitted that, in its effect on the promotion of health and daily comfort amongst all classes of society, the progress in Vegetable Cultivation during Queen Victoria's reign is worthy to rank with the achievements in lighting, locomotion, and sanitation.

What the progress in the next fifty or sixty years may be no one can foretell ; but on behalf of the seed trade, I venture to express the hope that it may be accompanied by a corresponding decline in the demand for older and inferior sorts. The labour and anxiety of keeping the rapidly increasing number of varieties true to name can only be fully understood by those acquainted with the details of seed growing.

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